Modern Data Warehouse Architectures: From A - Z

Course Outline

1. The Changing World of Business Intelligence

- Big Data: Hype or reality?
- Operational intelligence: does it require online data warehouses?
- Data warehouses in the cloud
- The shift from IT-based development to self-service BI
- The business value of analytics
- The need for modern data warehouse architectures

2. Characteristics of Traditional Data Warehouse Architectures

- Chain of databases and rigid procedures
- Initially designed for managed reporting
- Reports have to be auditable, governable, and must deliver high quality results
- Inflexible and poor productivity

3. The Influence of New Data Storage Technology on Architectures

- Are data marts needed when analytical SQL database servers are used?
- How to incorporate big data technology, such as Hadoop and NoSQL, in BI systems
- Dealing with schema-on-read data in a BI environment
- How specialized data storage technology, such as graph databases, can extend analytical power

4. The Logical Data Warehouse Architecture

- The need for a flexible data warehouse architecture
- The logical data warehouse architecture is based on the principle of data abstraction
- Data virtualization servers offers on-demand data integration

5. Data Lakes and Data Scientists

- How does a data scientist work?
- Investigative analytics and the data scientist
- Shortening the data preparation phase through a data lake
- Physical data lake versus logical data lake

6. BI in the Cloud

- The pros and cos of moving the data warehouse to the cloud

- Five levels of unburdening: hardware-in-the-cloud, database-in-the-cloud, data-warehouse-in-the-cloud, BI-solution-in-the-cloud, and BICC-in-the-cloud
- Is BI in the cloud suitable for fast data and data science?

7. From Operational BI to Fast Data and the Internet-of-Things

- Analytics at the speed of business
- Different forms of operational BI: operational reporting, operational dashboarding, operational analytics and embedded analytics
- What is time-series analysis?
- Fast data = big data + fast streaming + fast decisions
- The relationship between the Internet of Things and business intelligence

8. Data Warehouse Automation

- Building and maintaining data warehouse should not be a manual process
- Data warehouse automation to create and maintain data warehouses and data marts faster
- Being able to exploit new technology easier

9. Data Vault for Compliancy

- Modelling and developing enterprise data warehouses using data vault
- Data vault leads to highly flexible and integrated data structures and helps to ensure compliancy
- Using data vault to create more flexible data warehouses
- What are hub, link, and satelite tables?
- Using Supernova to make data in the data vault available to a large reporting audience

10. Closing Remarks